

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

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Listing of Claims:

1. (Currently Amended) A solder bump structure and laser repair process for memory device, comprising:

providing a semiconductor wafer, which comprises a substrate, an integrated circuit, and at least one bump pad formed on the substrate and electrically connected with the integrated circuit;

10 forming a first dielectric layer on a surface of the bump pad;

performing an etching process to form a contact hole in the first dielectric layer and to expose a portion of the bump pad;

15 forming a second dielectric layer on a surface of the semiconductor wafer outside of the contact hole;

performing an under bump metallurgy (UBM) process so as to form a metal layer on a surface of the contact hole;

forming a solder bump on the metal layer corresponding to the contact hole;

20 performing a circuit probing and a laser repair process after the formation of the solder bump, and using a probing tip in the circuit probing process by electrically connecting with the solder bump; and

performing a connection process to complete connection of the semiconductor wafer and a packaging board.

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2. (Original) The solder bump structure and laser repair process for memory device of claim 1 wherein the semiconductor wafer further comprises:

a plurality of fuses electrically connected with the integrated circuit;

at least one alignment key; and

30 a silicon oxide layer formed on a surface of the fuses and the alignment key.

3. (Original) The solder bump structure and laser repair process for memory device of

claim 2 wherein the method of forming the second dielectric layer on the surface of the semiconductor wafer outside of the contact hole comprises:

forming the second dielectric layer on the surface of the semiconductor wafer;
and

5 performing a photo-etching-process (PEP) to remove portions of the second dielectric layer formed on the surface of the contact hole, the fuses, and the alignment key.

10 4. (Original) The solder bump structure and laser repair process for memory device of
claim 2 wherein the integrated circuit further comprises an embedded memory array.

5. (Canceled)

15 6. (Original) The solder bump structure and laser repair process for memory device of
claim 1 wherein the second dielectric layer is composed of insulating materials such as benzocyclobutene (BCB), polyimide (PI), and BCB+PI.

20 7. (Currently Amended) A solder bump structure and laser repair process for memory device, comprising:
providing a semiconductor wafer, which comprises a substrate, an integrated circuit, and at least one bump pad formed on the substrate and electrically connected with the integrated circuit;
forming a dielectric layer on a surface of the bump pad;
25 performing an etching process to form a contact hole in the dielectric layer and to expose a portion of the bump pad;
performing an under bump metallurgy (UBM) process so as to form a metal layer on a surface of the contact hole;
forming a solder bump on the metal layer corresponding to the contact hole;
30 performing a circuit probing and a laser repair process after the formation of the solder bump, and using a probing tip in the circuit probing process by electrically connecting with the solder bump; and

performing a connection process to complete connection of the semiconductor wafer and a packaging board.

8. (Original) The solder bump structure and laser repair process for memory device of
5 claim 7 wherein the semiconductor wafer further comprises:
a plurality of fuses electrically connected with the integrated circuit;
at least one alignment key; and
a silicon oxide layer formed on a surface of the fuses and the alignment key.
- 10 9. (Original) The solder bump structure and laser repair process for memory device of
claim 8 wherein the integrated circuit further comprises an embedded memory array.

10. (Cancelled)

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